Office-Supreme Court, U.S.
FILED
FEB 7 1983
ALEXANDER L. STEVAS,
CLERK

Nos. 82-354, 82-355, 82-398

IN THE

Supreme Court of the United States

OCTOBER TERM, 1982

MOTOR VEHICLE MANUFACTURERS ASSOCIATION OF THE UNITED STATES, INC., *et al.*,
Petitioners

v.

STATE FARM MUTUAL AUTOMOBILE INSURANCE COMPANY, *et al.*,
Respondents

CONSUMER ALERT AND PACIFIC LEGAL FOUNDATION,
Petitioners

v.

STATE FARM MUTUAL AUTOMOBILE INSURANCE COMPANY, *et al.*,
Respondents

UNITED STATES DEPARTMENT OF TRANSPORTATION, *et al.*,
Petitioners

v.

STATE FARM MUTUAL AUTOMOBILE INSURANCE COMPANY, *et al.*,
Respondents

On Writs of Certiorari to the United States Court of Appeals for the District of Columbia Circuit

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APPENDIX TO BRIEF OF RESPONDENTS STATE FARM MUTUAL AUTOMOBILE INSURANCE COMPANY, *ET AL.*

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February 7, 1983

WILSON - EPES PRINTING CO., INC. - 789-0096 - WASHINGTON, D.C. 20001

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EXCERPTED PHOTOGRAPHS FROM FILM, "CRASHES THAT NEED NOT KILL"

The following sequence of photographs is excerpted from the Insurance Institute for Highway Safety film, "Crashes That Need Not Kill," which has been lodged with the Clerk of this Court. The Institute submitted the film to the passive restraint rulemaking record on August 2, 1976, in conjunction with Secretary Coleman's deliberations (OST Docket No. 44, Notice 76-8).

The first four photographs compare the effect of a collision on occupants in cars *with* airbags and *without* airbags. The cars are 1975 Oldsmobile Ninety-Eight sedans that were crashed into test barriers. As the film explains, none of the test dummies was wearing a seatbelt. The first car, which was not equipped with airbags, was crashed at 35 miles per hour. The second car, which was equipped with airbags, was crashed at 37 miles per hour.

The last eight photographs show, in a split-screen comparison, the results of two crash tests carried out by the Institute in 1976. As the film explains, in one test (top portion of split-screen photos), a 1975 Volvo sedan equipped with full front-seat airbags and occupant test dummies was crashed into a rigid barrier at 36 miles per hour. In the other test (bottom portion of photos), an identical 1975 Volvo not equipped with airbags was crashed into the barrier at 35 miles per hour.

The photographs from the film are in sequence—from the cars' first contact with the test barrier, through the deployment of the airbag in the top car, and through the completion of the occupants' forward movement into, respectively, either the cushioning airbag or, in the case of the unrestrained occupants, the steering column and windshield.

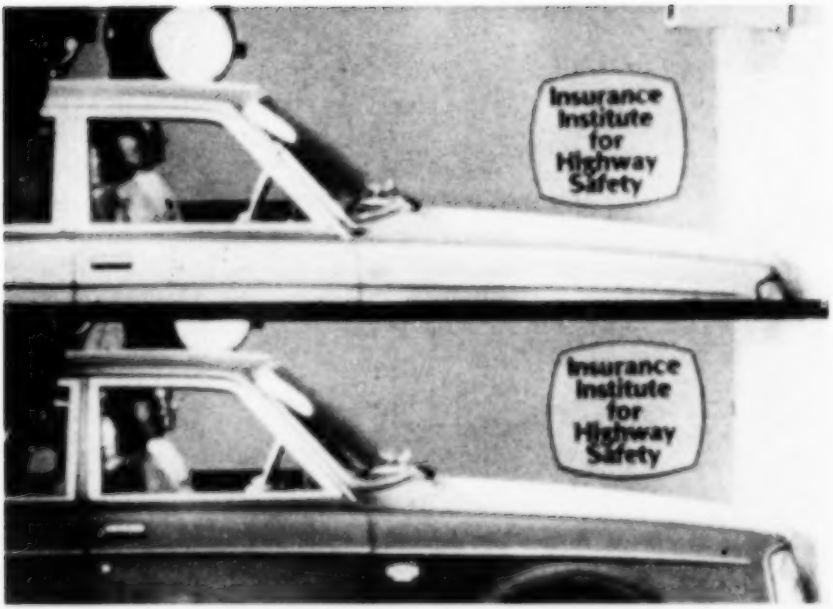
2a





5a

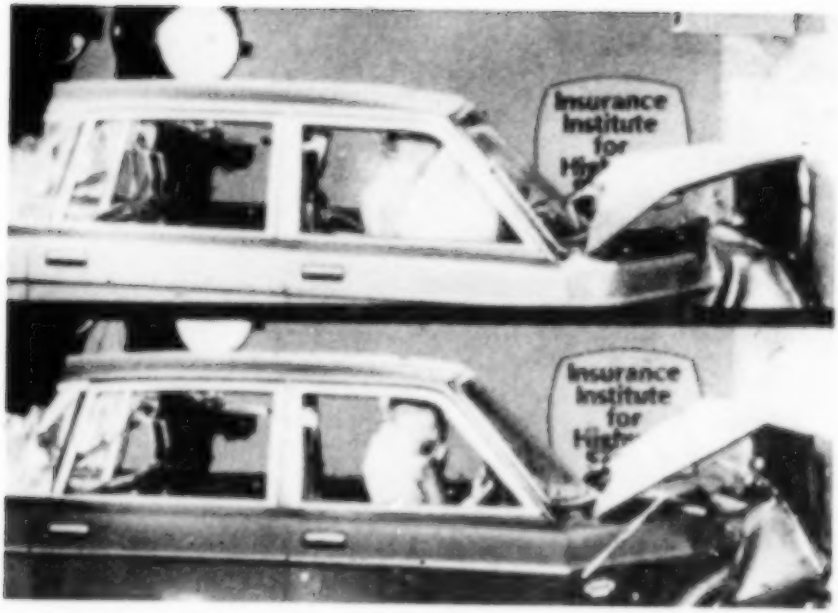


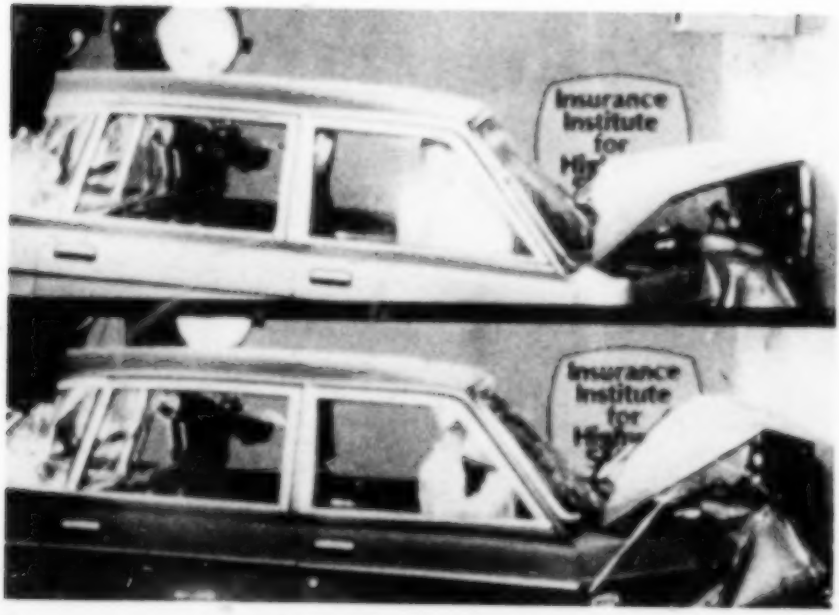

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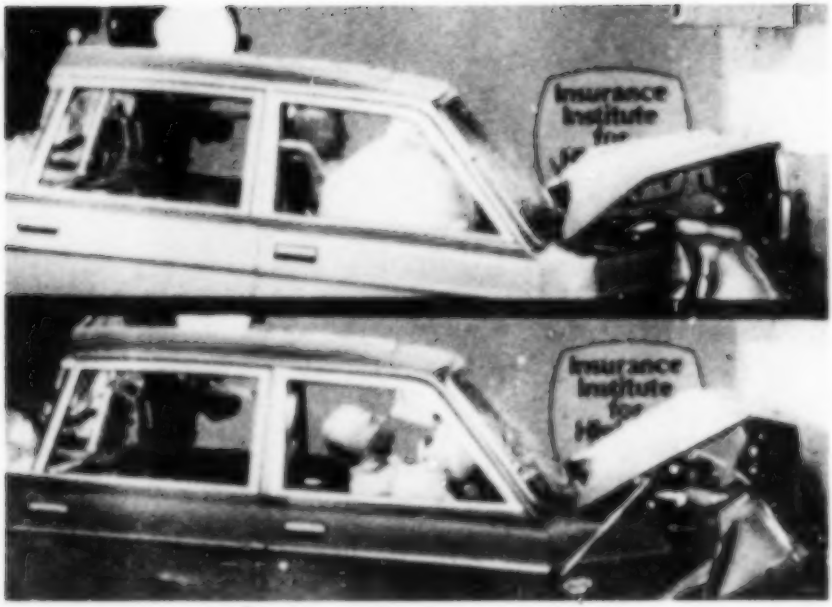

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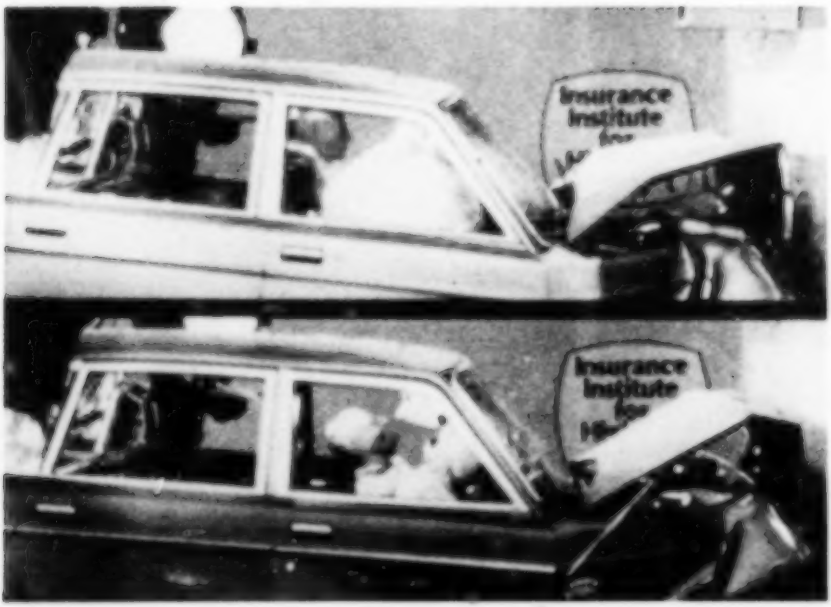

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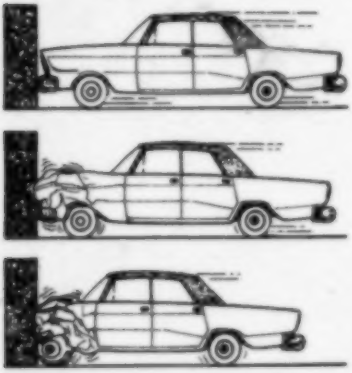

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What Happens in a Collision

1st, The Car Collision

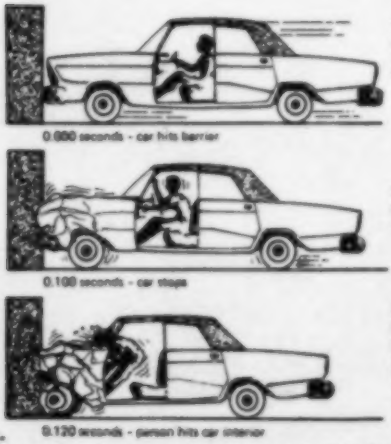


When a car hits a solid barrier, it doesn't stop all at once. The bumper stops immediately, but the rest of the car continues to move forward.

The car slows down as the crushing of the front end absorbs some of the force of the collision.

At 30 mph, the car takes about 1/10 of a second to come to a complete stop. The front end is crushed, but the passenger compartment usually remains undamaged.

2nd, The Human Collision



0.000 seconds - car hits barrier

0.100 seconds - car stops

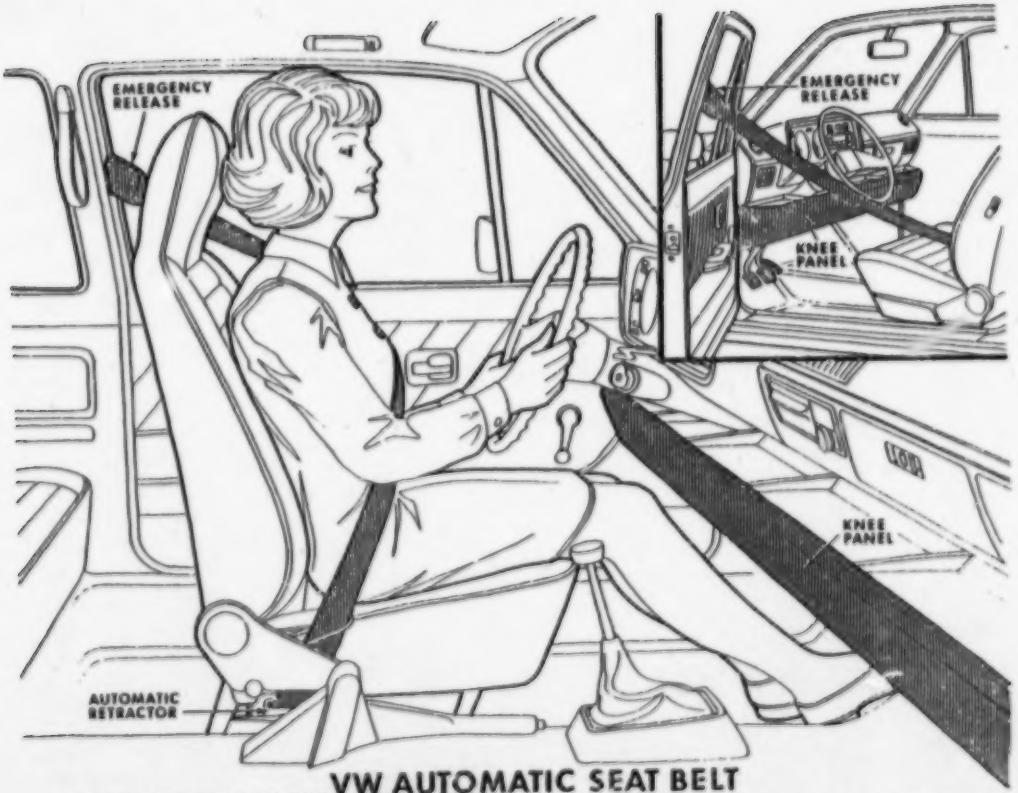
0.120 seconds - person hits car interior

On impact, the car begins to crush and to slow down. The person inside the car has nothing to slow him down, so he continues to move forward inside the car at 30 mph.

Within 1/10 of a second, the car has come to a complete stop, but the person is still moving forward at 30 mph.

One-fiftieth of a second after the car has stopped, the person slams into the dashboard and windshield. This is the human collision. The car takes 1/10 of a second to stop, the human takes only 1/100 of a second.

Source: NHTSA, Automobile Occupant Crash Protection, Progress Report No. 3, July 1980 at 14.



VW AUTOMATIC SEAT BELT

Source: Comments of Volkswagen of America, Inc., April 14, 1977 (74-14-N07-075)

VW 3183-75

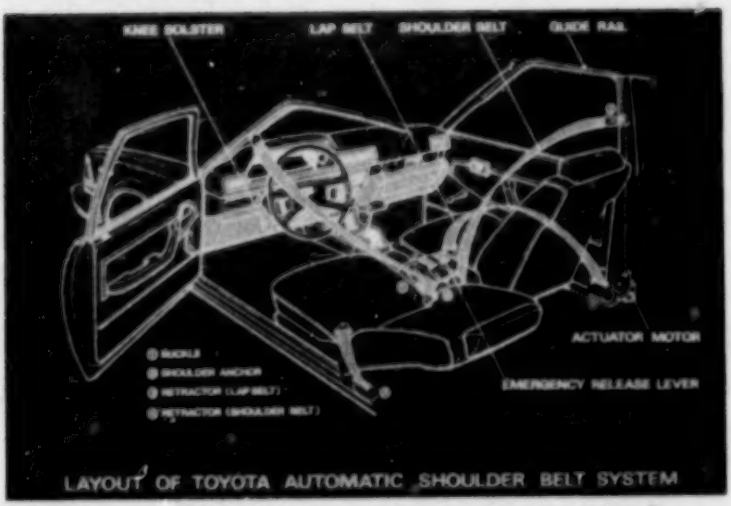
Figure III-D **Toyota Automatic Safety Belt**



Entering

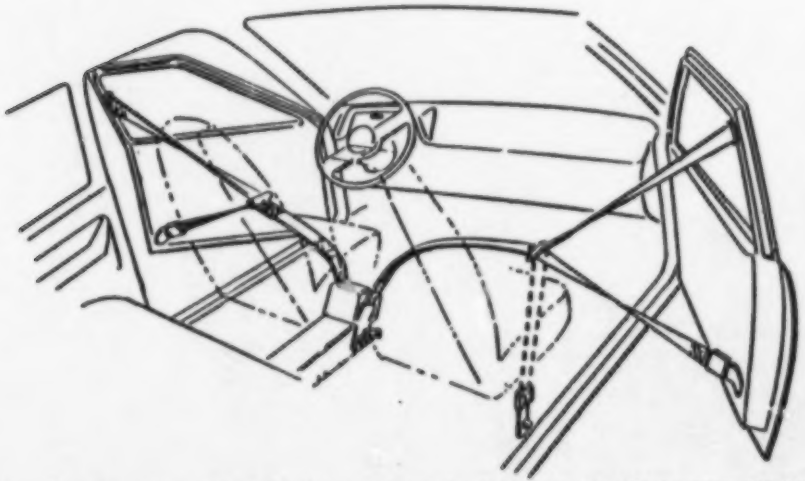


Seated



Source: NHTSA Occupant Crash Protection, Progress Report No. 3, July, 1980, at 28.

1980 Chevette Three Point Automatic Lap/Shoulder Belt
(Non - Separable)

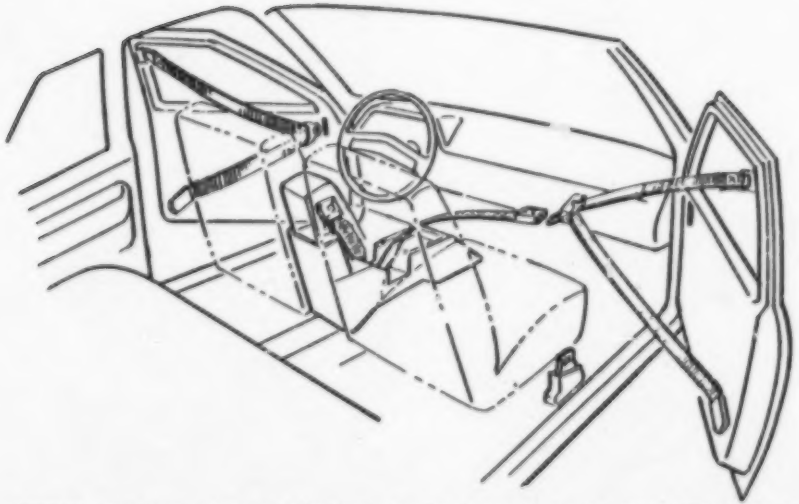


Source: Comments of General Motors, March 16, 1981, at 10a (74-14-NPRM-W20-109)

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THREE POINT AUTOMATIC BELT
(Separable)



Source: Comments of General Motors, March 16, 1981, at 9a (74-14-NPRM-N20-109)

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